Reviewer's report

Title: Predictors of Oral Rehydration Therapy use among under-five children in Eastern Ethiopia: A community based case control study

Version: 1 Date: 10 August 2012

Reviewer: Fessahaye Tesfamichael

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Discretionary Revisions

General comments
It is better to use the term 'caregiver' than 'caretaker' in the whole manuscript as caretaker could mean custodian.

At some sections of the manuscript the term 'caretaker' alone is used and in others the term 'mother/caretaker' is used. I recommend you to use the term 'caregiver' alone consistently.

Introduction
1. Second statement: delete the phrase in parenthesis as the idea is presented in the third statement and hence it would be redundancy.

Methods
2. First paragraph: delete the phrase in parenthesis put to elaborate the term 'kebele' as the term had been already been clarified in the introduction section.
3. Second paragraph, first statement: replace the phrase ‘the cases under five children with diarrhea in the preceding two weeks who received ORT’ with the word ‘cases’.

Minor Essential Revisions

Abstract
1. Delete the article 'the' from the second line.
2. Delete the full stop put after the word ‘unacceptably’.
3. Add the phrase ‘child with diarrhea’ at the end last statement of background subsection.
4. Revise results of the abstract in line with comments given in the body of the manuscript.
5. Revise the key words to make them pertinent. For instance you might restate ‘case control studies’ as case ‘control study’; delete ‘case management’, restate ‘determinants’ as ‘predictors’ and restate ‘solution’ as ‘therapy’.

Methods
6. First paragraph, last statement: cases and controls are defined as children with diarrhea who received and didn’t receive ORT in the preceding two weeks,
respectively. The time frame for the description ‘in the preceding’ is not specified. Mention preceding what. Make such revision elsewhere in the manuscript.

7. Third paragraph: restate the phrase ‘ratio of 1:1’ as ‘case to control ratio of 1:1’

8. Fourth paragraph, second statement: reconstruct the statement without use of additional clarifications in parenthesis to make it self-explanatory.

9. Fourth paragraph, third statement: replace the word ‘that’ with ‘who’ and ‘project’ with ‘center’.

10. Fourth paragraph, fifth statement: delete the phrase ‘with diarrhea’ and the word ‘primary’.

11. Fourth paragraph, last statement: delete the word ‘closely’.

12. Eighth paragraph, fifth statement: replace ‘was’ with ‘were’.

Results

13. Under the subtitle ‘Caretakers’ knowledge and utilization of ORT’, second statement: restate the statement as ‘…management of diarrhea which is higher compared to…’

14. Fifth paragraph, second statement: insert ‘seeking’ before the word ‘advise’.

15. Fifth paragraph, last statement: indicate that the values in the parenthesis refer to 95% CI.

Conclusion

Third statement: delete the verb to be ‘be’.

Authors’ information

Third statement: add the word ‘including’ after public health and change the word ‘method’ with ‘methodology’.

Major Compulsory Revisions

Title

1. The title is stated as “Predictors of Oral Rehydration Therapy use among under-five children in Eastern Ethiopia: A community based case control study”. Looking at the title it seems that the study included all under-five children whereas only children with diarrhea were eligible for the study. Restate the title so that it reflects the fact that the study participants were children with diarrhea.

Methods

2. Second paragraph: the idea of the first statement is reflected in the last statement. Integrate the two statements to avoid redundancy.

3. Second paragraph, third statement: it is stated that cases and controls were selected through canvas survey. During the survey, it is logical to assume that, you used a definition which mentions the time frame ‘preceding two weeks’. If the main study was carried out latter, some participants would be lost as the time frame ‘preceding two weeks’ might not apply. How did you manage or took into account for such discrepancies?

4. Second paragraph: Place the description about sampling technique after
description about sample size determination. The sampling technique describes that controls were randomly selected from a sampling frame prepared after the canvas survey. How about for the cases? Describe.

5. Third paragraph: it is stated that one of the assumptions in sample size determination was ‘detectable odds ratio of 1.74’ and a reference where the value is taken is cited. However, such value can’t be found in the cited reference. Make necessary revision.

6. Fifth paragraph: the list of variables includes ‘access to ORS’ and ‘health seeking behavior’. These variables need to be operationally defined in order to make it clear to the reader how they were measured. In addition the meaning of variables ‘recognizing the severity of diarrhea and dehydration’ is not clear. Restate them clearly.

7. Sixth paragraph: it is stated that the definition of ORT includes ‘increase fluids’ besides provision of ORS and home recommended fluids. How did you assess and accommodate ‘increase fluids’ this in the study?

8. Seventh paragraph: Knowledge of caretakers was categorized using mean score as cut off point. What is your basis for such classification? Describe. Did you check distribution of the scores before classification? If not, check whether it is biomodal or unimodal. Classification into two groups is preferred for data with bimodal distribution and into three or more for data with unimodal distribution.

9. Eighth paragraph, sixth statement: which method of logistic regression was used? Mention whether it was forward, backward or enter method.

10. Eighth paragraph, last sentence: What is basis for using \( p < 0.1 \) to select variables for multivariate analysis? Mention. It is also stated that ‘…the variables with \( p < 0.05 \) were identified in the final logistic regression model considered as significant’. Restate it as ‘…the variables with \( p < 0.05 \) in the final logistic regression model were considered as statistically significant’. You should also mention what measures were undertaken to check for multi-collinearity among independent variables.

Results

11. First paragraph, third statement: the numerical adjectives are placed after the nouns. For instance the statement begins as ‘Most of the cases 202(83.8%) and…’. This is not grammatically correct. There are several instances of such errors elsewhere in the results section. Reconstruct the statements in such a way that numerical adjectives are placed before the nouns or by using translational phrases.

12. The term utilization in the subtitle ‘Caretakers’ knowledge and utilization of ORT’ doesn’t comprehensively and appropriately reflect the contents under the title. Restate it.

13. The way results are written is erratic. For some independent variables you have presented absolute and relative frequency of their values among cases and controls, their OR values and additionally narrated magnitude of the proportions and the presence statistical significance. Example of such variable includes wealth status. For other variables like ‘perceiving teething as cause of diarrhea’
proportions are not presented. Furthermore for other variables like ‘perceived
signs of severity’ presence of statistically significant association was not
narrated. Revise the whole results to make the way of narrations consistent and
pertinent focusing on prominent findings and not necessarily describing all
contents presented in tables.

14. Revise use of the word ‘significant’. You sometimes used the word to refer to
statistical significance and in other instances to refer to higher proportions. This
creates ambiguity. For instance its use in last statement under the subtitle
‘Caretakers’ knowledge and utilization of ORT’ is not clear whether it refers to
statistical significance or to the magnitude of proportions.

15. Some of the contents under results section are given subtitle but others are
not. The second and third paragraphs are given subtitle but not to the first and
fourth paragraphs. This made the results to lack cohesion. Revision is necessary
in order to maintain coherence flow of contents.

16. Fifth paragraph: the variables stated as ‘…perceived causes, assessment of
severity of diarrhea and dehydration’ are not clear and not stated the same way
as in the methods and third paragraph of results. Make necessary revisions.
Variables mentioned in the second statement came out of those mentioned in the
first statement but ‘advice or treatment from health facilities’ is mentioned in the
second but not in the first statement. The list also misses the variables ‘presence
of ORS at home’. Besides all the lists in the second statement are variables
names, except the last one which refers to value of a variable. Revise them to
maintain consistency.

17. Fifth paragraph: the variables caretaker’s knowledge and care-related
variables were entered altogether in multivariate logistic model. Most of the
variables appear to be correlated. Did you check for multi-collinearity?

18. Paragraphs 4, 5 and 6: In the methods section it was described that those
variables with p<0.1 were considered for multivariate analysis but here it is stated
that multivariate analysis was performed for socio-demographic variables and for
other variables separately and then selected variables were entered in final
model. In the latter method predictor variables are screened twice. What is your
rationale for doing so?

19. Last paragraph, second statement: from the description in the statement it
might seem for the reader that those who perceived teething as cause of
diarrhea were likely to use ORT and on top of this the reference category for this
variable is not mentioned which creates more confusion. Therefore, it is better to
mention specific category of the variables which is positively or negatively
associated with the outcome and mentioning the direction of association.

Discussion

20. First paragraph: as commented in the results section it is more clear and
informative to mention categories of the variables positively or negatively
associated with the outcome.

21. Third paragraph, second statement: it is stated that knowledge of caretakers
was associated with ORT use. Specify the domain of knowledge and mention the
direction of association between knowledge and use.

22. Fourth paragraph: the findings indicate that those who sought care from health facilities were more likely to use ORT. From this finding a conclusion is made that caretakers need advice of health care providers to use ORT and this may hinder immediate start of ORT. The conclusions drawn go beyond the findings. Firstly, the fact that those who sought care were likely to use ORT doesn’t confirm that the ORT use was necessarily after seeking care. It is likely those who start ORT immediately might also seek care from health facilities latter. Hence, it is necessary to confirm which one precedes; seeking care or ORT use. Secondly, in order to identify factors that hinder ORT use, comparison of time of start of ORT should be made among all those who used ORT. Therefore, the discussion should be revised in a way that it is bases on the findings.

23. Fifth paragraph, fourth statement: the idea reflected about misunderstanding related to teething is not clear. Reconstruct the statement in meaningful way.

24. Sixth paragraph, first statement: reconstruct the description about association with educational status clearly.

25. Sixth paragraph, fourth and fifth statements: the reason that the population was homogenous with respect to educational status is used to explain the absence of statistically significant association. This can't be a reason as long as valid statistical tests are performed.

26. Last paragraph, second statement: it is mentioned that the interval time between the event and data collection was minimized as short as two weeks. Is the time taken by the canvas survey taken into consideration? In the seventh statement of the same paragraph it is mentioned that the canvas survey may reduce selection bias. However, it should also be noted it also increase possibility of recall bias.

Conclusion

27. First statement: indicate the direction of association.

28. Fourth statement: it is stated that caretaker’s should be encouraged. What are the caretakers encouraged to do? Mention it.

Tables

29. Why percentages are presented along with absolute frequencies only in table 3 but not in table 1 and 2?

30. Table 3: Computed COR values are presented for all categories of the first three variables without having a reference category. One of the categories for each variable should be a reference category and have a value of 1.

31. Table 4: as commented earlier what is your rationale for using such method of variable selection for multivariable analysis?

32. Table 4: The values of the variable ‘perceived teething as cause of diarrhea’ were ‘yes’ and ‘no’. It was found that those who perceive teething as cause were less likely to use ORT. However, the comparison group i.e the ‘no’ category as it can be inferred from table 3 includes the other misperception ‘evil eye’ and ‘no
idea’ which both indicate lack of awareness on cause of diarrhea. Comparing one misperception with others doesn’t make sense. You may recategorize the variable to have values ‘misperception’ and ‘correct perception’ and take the ‘misperception’ category as reference to make meaningful comparison.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.